



OCED
Office of Clean Energy Demonstrations

THE OFFICE OF CLEAN ENERGY DEMONSTRATIONS



Carbon Management Project Review

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Disclaimer

As DOE is actively engaged in financial assistance planning, we are subject to constraints during this period to ensure fairness of the process:

- **DOE can only communicate public and non-privileged information during this meeting or event.**
- **DOE cannot discuss the details of active or planned financial assistance matters [e.g., Requests for Information (RFI), Notices of Intent (NOI), Funding Opportunity Announcements (FOA)] or entertain requests for a specific outcome or benefit related to a financial assistance activity.**

Background

- The International Energy Agency says we need global public investments of at least \$90 billion this decade for large-scale clean energy demonstration projects to achieve net zero emissions by 2050
- Two recent historical climate laws enacted—the Bipartisan Infrastructure Law and Inflation Reduction Act—appropriated \$25+ billion to the Office of Clean Energy Demonstrations (OCED) to deliver large-scale clean energy demonstration projects
- OCED will accelerate clean energy technologies from the lab to market and fill a critical innovation gap on the path to achieving our nation's climate goals while mitigating risks that allow private sector investors and developers to act



OCED Mission

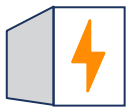
Deliver clean energy technology **demonstration projects at scale** in partnership with the **private sector** to **accelerate deployment, market adoption**, and the **equitable transition** to a decarbonized energy system.



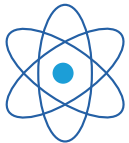
OCED Scope



Regional Clean Hydrogen Hubs (\$8 billion)



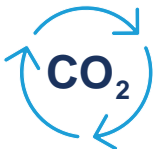
Long-Duration Energy Storage Demonstrations (\$505 million)



Advanced Reactor Demonstrations (\$2.5 billion)



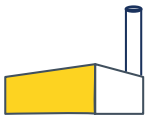
Energy Improvements in Rural or Remote Areas (\$1 billion)



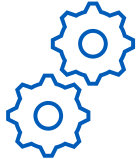
Carbon Management (\$7 billion)



Clean Energy Demonstrations on Mine Land (\$500 million)

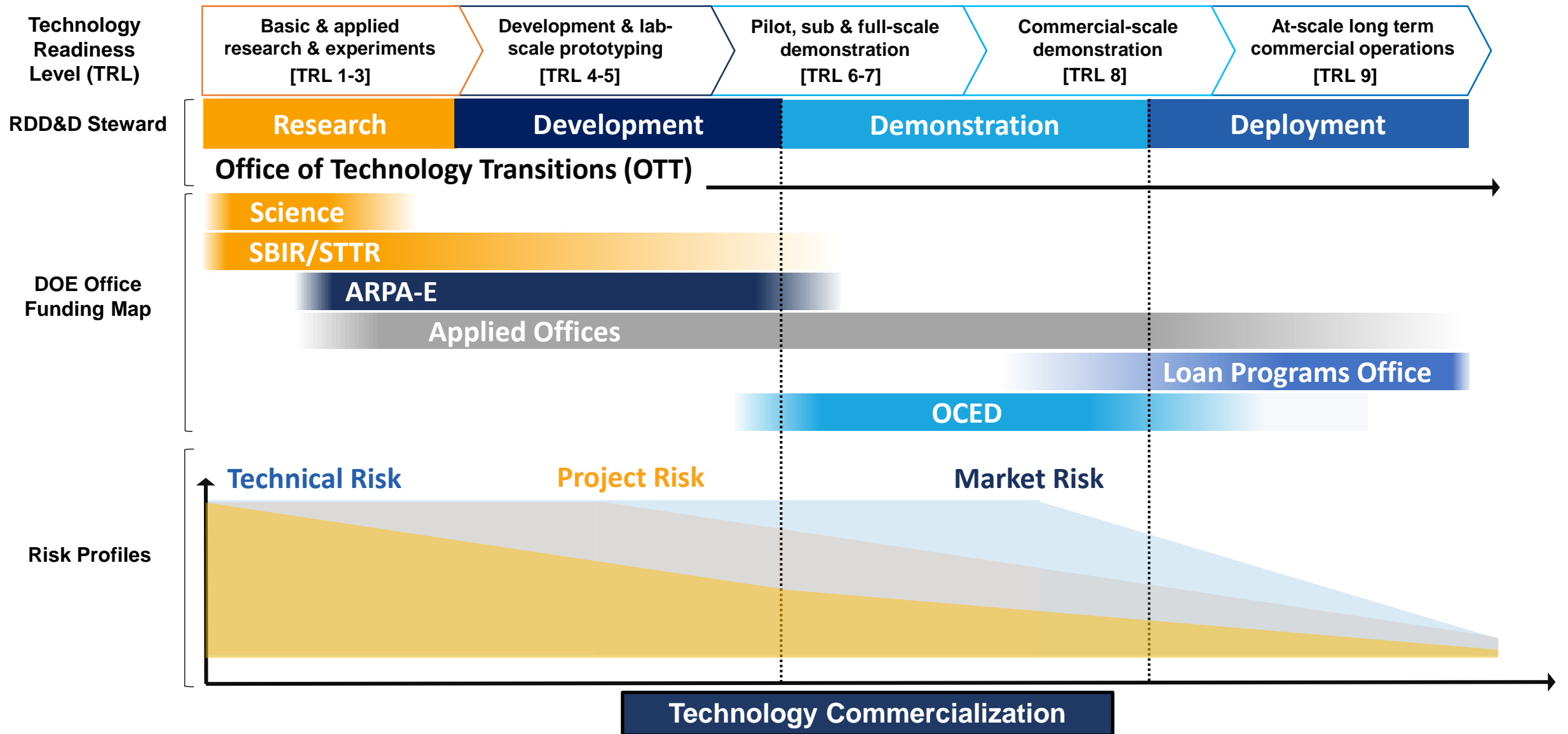


Industrial Demonstrations (\$6.3 billion)



Other Initiatives (\$133 million)

Role Across Research, Development, Demonstration & Deployment (RDD&D) Continuum



Phased Approach to Project Management

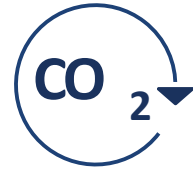
- ☆ Initial Application
- ◇ Go/No-Go Decisions





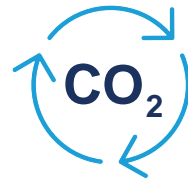
Carbon Management

Three programs



Carbon Capture Demonstration

Projects: Develop six carbon capture facilities to improve costs, emissions reductions, and environmental effects from coal and natural gas



Carbon Capture Large-Scale Pilot

Projects: Establish and test innovative carbon capture pilot projects large enough to support new processes and technology improvements at scale



Regional Direct Air Capture

Hubs: Develop four regional direct air capture hubs to capture and sequester, utilize, or sequester and utilize at least 1,000,000 metric tons of CO₂ annually from a single unit or multiple interconnected units



Carbon Management

Three programs

Current Status

Carbon Capture Demonstrations

- Front-end engineering design (FEED) studies
 - May 2023: Selected nine FEED studies projects for award negotiation
 - September 2022: Announced \$189M funding for front-end engineering design (FEED) studies
- FOA
 - May 2023: Received Full Applications
 - March 2023: Received letters of intent
 - February 2023: Issued \$1.7B funding announcement to demonstrate commercial-scale carbon capture technologies integrated with CO₂ transportation and geologic storage infrastructure

Carbon Capture Large-Scale Pilot Projects

- July 2023: Received Full Applications
- April 2023: Received concept papers
- February 2023: Issued \$820M funding announcement

Regional Direct Air Capture Hubs

- August 2023: Selected two projects for award negotiation
- December 2022: Issued \$1.2B funding announcement

CCS FEED Study Selections

State	Project Title	Facility	Project Selectee
Arkansas	Ash Grove Foreman Cement Plant Carbon Capture and Storage	Cement	Southern States Energy Board
Florida	Polk Power Station Integrated CO2 Capture Project	NGCC	Tampa Electric Company
Indiana	Edwardsport Flex Fuel Integrated Capture for Indiana's ENergy Transition (EFFICIENT)	IGCC	Duke Energy Indiana
Indiana	Mitchell Cement Plant Integrated CO2 Capture Project	Cement	Lehigh Hanson
Illinois	Integrated Capture, Transport, and Geological Storage of CO2 Emissions from City Water, Light and Power	Pulverized Coal	University of Illinois
Louisiana	Lake Charles Power Station Integrated CO2 Capture Project	NGCC	Entergy Services
Louisiana	Cypress Carbon Capture Project	NG CHP	Taft Carbon Capture
New Mexico	Four Corners Power Plant Integrated Carbon Capture and Storage	Coal	Navajo Transitional Energy Company
Wyoming	Integrated Carbon Capture and Storage Project at Dry Fork Station	Coal	Membrane Technology and Research



Regional DAC Hub Project Selections (Topic Area 3)

Regional DAC Hub Projects are led by the Office of Clean Energy Demonstrations (OCED)
Two projects selected for negotiations

- **Project:** South Texas DAC Hub
- **Location:** Kleberg County, TX
- **DAC Hub Owner:** 1PointFive
- **Technology Provider:** Carbon Engineering Ltd.

- **CO₂ Removal:** Designed to capture up to 1 million metric tons of CO₂ annually
- **CO₂ Storage:** Saline geologic CO₂ storage site

- **CBP Highlights:** Creation of ~2,500 jobs in construction, operations, and maintenance with existing agreements for local hiring—including a target quota for local construction and operations; creation of a Citizen Advisory Board to ensure meaningful community engagement

- **Project:** Project Cypress
- **Location:** Calcasieu Parish, LA
- **DAC Hub Owner:** Battelle
- **Technology Providers:** Climeworks, Heirloom Carbon Technologies

- **CO₂ Removal:** Aims to capture more than 1 million metric tons of CO₂ annually
- **CO₂ Storage:** Deep saline aquifer, through an offtake agreement with Gulf Coast Sequestration

- **CBP Highlights:** Creation of ~2300 jobs, with a goal to hire workers formerly employed by the fossil fuel industry for 10% of the overall workforce; robust two-way community engagement towards developing a Community Benefits Plan



A large, semi-transparent white 'H2' logo is positioned in the upper left quadrant of the slide, set against a background of a blue-tinted industrial scene featuring a large vertical pipe and a circular valve.

Regional Clean Hydrogen Hubs

Build 6-10 regional clean H2Hubs across the country to create networks of clean hydrogen producers, consumers, and local connective infrastructure to accelerate use of clean hydrogen.

- Feedstock diversity
- End use diversity
- Geographic diversity
- Employment and training

Current Status

- July 2023: Announced \$1B NOI and RFI for demand-side hydrogen initiative
- May 2023: Sent Encourage/Discourage notices for FOA
- April 2023: Received Full Applications for FOA
- November 2022: Received concept papers for FOA
- September 2022: Issued \$7B funding announcement



Industrial Demonstrations

Demonstrate transformational technologies to decarbonize energy-intensive industries

- Drive a U.S. competitive edge in low- and net-zero carbon manufacturing
- Help build a market for green products through high-impact, replicable solutions

Current Status

- August 2023: Received Full Applications
- June 2023: Sent Encourage/Discourage notices
- April 2023: Received concept papers
- March 2023: Issued \$6B funding announcement

Links



Responsible Carbon Management Initiative:

[Responsible Carbon Management Initiative Announcement | Department of Energy](#)



CarbonSAFE:

[CarbonSAFE | Department of Energy](#)



Additional CM Funding at DOE:

[Office of Fossil Energy and Carbon Management Funding Opportunities | Department of Energy](#)



CM Liftoff Report:

[About the Pathways Reports - Pathways to Commercial Liftoff \(energy.gov\)](#)



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Thank you!



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